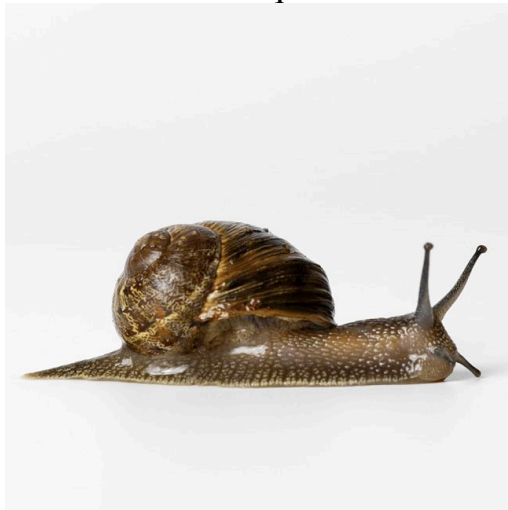




## INTRODUCTION TO INVERTEBRATES

We share our world with millions of **invertebrates**. Some 97% of all living creatures are invertebrates, that is animals that do not possess a backbone. These include fleas, stick insects, spiders and even snails and larger animals like the squid.



Some invertebrates have a special body structure called an **exoskeleton**, a hard external structure as seen on a scorpion or millipede. Other species, like worms, are composed entirely of soft tissues.



Some invertebrates, like bees, are very useful to humans as they produce honey and wax and pollinate trees. Others are considered terrible pests, like mosquitoes and locusts.

There are many groups of invertebrates two of the largest classes are:

**INSECTS** - typically have 6 legs and wings as adults. For example the locust - mantis and beetle

**ARACHNIDS** - have 8 legs. For example spiders, scorpions and ticks.



### KEEPING WARM

All invertebrates are **ectothermic**, which means that they are reliant on external sources of temperature to maintain their bodily functions. Most species are found in tropical countries, however some are still found in very extreme conditions like underneath the polar ice caps.



## SKIN / EXOSKELETON

All invertebrates in order to grow larger must shed their skin, a process known as **ecdysis**.

Many invertebrates grow slowly and each stage of shedding skin is called an instar.

The skins of many invertebrates like insects may also be coloured to help with **camouflage** or even covered in spines for defence.



## DIET

Invertebrates consume a variety of foodstuffs. Some species like spiders and scorpions are **carnivores**, while others, such as stick and leaf insects are **herbivores**. Cockroaches are scavengers, willing to consume almost anything edible on offer. Foodstuffs may be obtained in a huge variety of ways and may be grazed, trapped, hunted, ambushed, snared or lured depending on the individual species of invertebrate.

## LIFECYCLE

Amongst the millions of known species there is an enormous range of reproductive strategies to ensure the survival of this diverse group of animals. Many species produce eggs after a mating embrace, some are **parthenogenic** (unmated females producing fertile eggs) and most molluscs, including snails are **hermaphrodites**.



## Glossary

**Camouflage** To hide something by making it look like its surroundings.

**Carnivore** Any animal or plant that feeds on animals.

**Ecdysis** The periodic shedding of the cuticle or outer skin in insects and other invertebrates/arthropods.

**Ectotherm** Any animal that relies on external heat sources to maintain body temperature.

**Exoskeleton** The external protective structure or cuticle of arthropods.

**Herbivore** Any animal that feeds on plant matter.

**Hermaphrodite** Possessing both male and female reproductive organs.

**Invertebrate** Any animal lacking a backbone

**Parthenogenic** The ability to produce a fertile egg without being fertilized.